



## Making Treatment Decisions

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### Quercetin

**Other common name(s):** quercetine, sophretin, meletin

**Scientific/medical name(s):** 3,3',4',5,7-pentahydroxyflavone

#### Description

Quercetin is a type of plant-based chemical (phytochemical) known as a flavonoid (see also [Phytochemicals](#)). Good sources include apples, onions, teas, red wines, and many other foods. Quercetin is also available as a dietary supplement.

#### Overview

Quercetin appears to have anti-inflammatory and antioxidant properties. It has been promoted as being effective against a wide variety of diseases, including cancer. While some early lab results appear promising, as of yet there is no reliable clinical evidence that quercetin can prevent or treat cancer in humans.

#### How is it promoted for use?

Quercetin is said to have a number of uses, but most of these are based on early findings from lab studies. Some early studies have suggested quercetin has antihistamine properties, and it is often promoted to help control allergies and asthma. Some proponents claim it can help stabilize small blood vessels and may help protect against heart attacks and strokes.

Quercetin is sometimes promoted to help prevent or treat different types of cancer. It has also been promoted to help with the symptoms of chronic prostatitis (swelling of the prostate gland) and to relieve some of the neurologic complications of diabetes.

#### What does it involve?

Quercetin is a common chemical pigment in the rinds and barks of a wide variety of plants. It is one of the main flavonoids in the diet, and is found in large amounts in apple skins, onions, teas, and red wines. It is also found in leafy green vegetables, berries, and in herbs such as ginkgo and St. John's wort.

Quercetin is available in higher amounts in dietary supplements, usually in capsules or tablets ranging in doses from 50 milligrams (mg) to 500 mg. There is no recommended standard dose for quercetin.

#### What is the history behind it?

Plants containing various flavonoids have a long history of use in traditional medicines in many cultures, but the flavonoids themselves were not discovered until the 1930s.

Quercetin first gained attention several decades ago when it was found to cause DNA mutations in bacteria, a possible sign that it might actually contribute to causing cancer. Animal research done since that time has been inconclusive, and what little evidence there is in humans does not seem to support this idea. Research in recent years has focused on several possible helpful effects of quercetin, including its potential role in preventing cancer.

#### What is the evidence?

Most of the research on quercetin and cancer has been done in cell culture or animal studies. These types of

studies can suggest possible helpful effects, but they do not provide proof that such effects can be achieved in humans. It is still unclear how well quercetin is absorbed by the human body when taken by mouth. Controlled clinical trials are needed to show whether or not quercetin has helpful properties in humans.

Studies done in cell cultures in the lab have shown that quercetin has activity against some types of cancer cells. This may be due to its antioxidant or anti-inflammatory properties, or it may be due to other mechanisms. Recent studies suggest that quercetin can slow the growth of cancer cells and can help foster apoptosis, a form of natural cell death that doesn't happen in most cancer cells. Some studies in animals have shown that quercetin may help protect against certain cancers, particularly colon cancer.

Studies that looked at large groups of people have focused on flavonoids in the diet as opposed to quercetin in particular. These types of studies cannot prove cause and effect, but often suggest links that can be tested in clinical trials. While some of these studies have found that people with diets high in flavonoids may have less risk of breast, lung, and other cancers, it is not clear what role quercetin may have played in these findings. No clinical trials testing the ability of quercetin to prevent or treat cancer have been reported in the available medical literature. These kinds of studies are needed to clarify its possible benefits.

Until conclusive research findings emerge, most experts advise a balanced diet with an emphasis on fruits, vegetables, legumes, and whole grains. The interaction between certain phytochemicals and the other compounds in foods is not well understood, but it is unlikely that any single compound offers the best protection against cancer. A balanced diet that includes 5 or more servings a day of fruits and vegetables along with foods from a variety of other plant sources such as nuts, seeds, whole grain cereals, and beans is likely to be more effective in reducing cancer risk than eating one particular phytochemical in large amounts.

In addition to cancer prevention and treatment, preliminary studies have also suggested potential value for quercetin in prostatitis (inflamed prostate) and heart disease, but further studies are needed before any recommendations can be made.

## Are there any possible problems or complications?

Quercetin in the amounts consumed in a healthy diet is unlikely to cause any major problems. There have been some occasional reports of nausea when taken as high doses in supplements.

Quercetin supplements have not been studied for safety in women who are pregnant or breast-feeding.

## Additional Resources

### More Information From Your American Cancer Society

The following information on complementary and alternative therapies may also be helpful to you. These materials may be ordered from our toll-free number (1-800-ACS-2345).

- [Guidelines for Using Complementary and Alternative Methods](#)
- [How to Know What Is Safe: Choosing and Using Dietary Supplements](#)
- [American Cancer Society Operational Statement on Complementary and Alternative Methods of Cancer Management](#)

## References

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Note: This information may not cover all possible claims, uses, actions, precautions, side effects or interactions. It is not intended as medical advice, and should not be relied upon as a substitute for consultation with your doctor, who is familiar with your medical situation.

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